

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

1. (currently amended) A communication filter comprising:
a dielectric block having a first and a second end portion and a central portion therebetween, the dielectric block having a top surface, a bottom surface and a plurality of through-holes each extending between an opening on the top surface and an opening on the bottom surface;
a first and a second antenna coupling ~~pad~~ area located on the top surface of ~~on~~ the block;
a transmitter coupling pad on the block;
a receiver coupling pad on the block;
a plurality of coupled resonators formed by a first set of the plurality of through-holes and extending through the block between the top and bottom surfaces;
a trap resonator formed by at least one of the plurality of through-holes and extending through the block between the top and bottom surfaces and located in the central portion between the first and the second antenna coupling ~~areas~~ pads,
the trap resonator providing attenuation outside of a desired passband[.]; and
a decoupler formed by at least a second one of the plurality of through-holes and extending through the block between the top and bottom surfaces and located in the central portion, the trap resonator being located between the decoupler and one of the first and second antenna coupling areas.

2. (currently amended) The communication filter according to claim 1 further comprising a second trap resonator extending through the block between the top and bottom surfaces and located at ~~an~~ the first end portion.

3. (currently amended) An antenna duplexer comprising:

- a dielectric block having ~~three~~ a first, a second and a third sets of paired opposed sides and a central portion;
- a first and a second antenna coupling electrode located on the ~~elongate ceramic dielectric~~ block in the central portion;
- a first section of the block extending between the first antenna electrode and a first end of the block;
- a second section of the block extending between the second antenna electrode and a second end of the block, the second end opposing the first end,
- each of the first and second sections having a plurality of coupled resonators extending between ~~one the first set of the paired opposed sides,~~ the plurality of coupled resonators being defined by a plurality of metallized through-holes extending between the first set of paired opposed sides;
- a decoupler located in the central portion of the dielectric block and being defined by one of the plurality of metallized through-holes extending between the first set of paired opposed sides, the decoupler further being located between the first and second antenna coupling electrodes; and
- a relatively expansive metallized area located on the block for providing a reference potential, the block further comprising a metallization extension on one of the sides of the first set of paired opposed sides, the metallization extension extending between the decoupler and the relatively expansive metallized area.

4. (currently amended) A communication signal filter comprising:

a core of dielectric material having a first end, a second end, a top surface, a bottom surface, a first, a second, a third and a fourth side, the core further having ~~and~~ defining a plurality of through-holes, each of the through-holes extending between an opening on the top surface and an opening on the bottom surface;

a plurality of metallized areas on the core including,

a first input-output coupling area located on the top surface and extending onto the first side,

a second input-output coupling area located on the top surface and extending onto the first side, the second input-output coupling area being spaced apart from the first input-output coupling area along a length of the core between the first and second ends, the first and second input-output coupling areas defining respective first and second antenna coupling areas,

a third input-output coupling area on the top surface and extending onto the first side and positioned between the first input-output coupling area and the first end,

a fourth input-output coupling area on the top surface and extending onto the first side and positioned between the second input-output coupling area and the second end,

wherein the core and the plurality of metallized areas together define at least one ~~through-hole~~ trap resonator positioned between the first input-output coupling area and the second input-output coupling area, the trap resonator being defined by at least one of the plurality of through-holes extending between the top surface and the bottom surface.

5. (currently amended) A communication signal filter comprising:

- a core of dielectric material having a first end, a second end, a top surface, a bottom surface and defining a plurality of through-holes, each of the through-holes extending between an opening on the top surface and an opening on the bottom surface;
- a plurality of metallized areas on the core including,
 - a receiver coupling area,
 - a transmitter coupling area spaced apart from the receiver coupling area along a length of the core between the first and second ends,
 - a first antenna coupling area positioned between the receiver coupling area and the transmitter coupling area,
 - a second antenna coupling area positioned between the receiver coupling area and the transmitter coupling area,
 - a relatively expansive area,

wherein at least one of the plurality of through-holes is positioned between the first and second antenna coupling areas to define a first trap resonator; and

a decoupler positioned between the first and second antenna coupling areas, the decoupler being defined by another of the plurality of through-holes, the other of the plurality of through-holes defining the decoupler having a metallized sidewall conductively connected to the relatively expansive area at both the top surface and the bottom surface.

6-7. (canceled).

8. (currently amended) The filter of claim 5 wherein at least another of the plurality of through-holes is positioned between the first end of the block and the transmitter coupling area to define a second trap resonator.

9. (currently amended) The filter of claim 5 wherein at least another of the plurality of through-holes is positioned between the second end of the block and the receiver coupling area to define a third trap resonator.

10-12. (canceled).

13. (currently amended) In a communication filter including a plurality of coaxial resonators ~~formed~~ provided in a monoblock having a first set of metallized through-holes extending through the filter between opposed top and bottom surfaces and a metallization pattern, the monoblock having first and second ends and a central portion, the improvement which comprises:

a first and a second antenna coupling metallized area in the central portion;

a decoupler positioned between the first and the second antenna coupling metallized areas, the decoupler being formed by a second metallized through-hole extending between the top and bottom surfaces of the filter;

and a first trap resonator positioned between one of the first and the second antenna coupling metallized areas in the central portion and the decoupler, the first trap resonator being formed by a third metallized through-hole extending between the top and bottom surfaces of the filter.

14. (new) The communication filter of claim 13 wherein a fourth metallized through-hole is positioned between the first end of the block and a transmitter coupling area to define a second trap resonator.

15. (new) The communication filter of claim 13 wherein a fifth metallized through-hole is positioned between the second end of the block and the receiver coupling area to define a third trap resonator.

16. (new) The communication filter of claim 13 wherein a sixth metallized through-hole defines a fourth trap resonator positioned between the other of the first and second antenna coupling metallized areas in the central portion and the decoupler.

17. (new) The communication filter of claim 13 further comprising a metallization pattern extension extending between the decoupler and the metallization pattern.